

## QUARTERLY GROUNDWATER MONITORING REPORT

Fourth Quarter 2005 (Fourteenth Quarterly)
Sampled on October 25, 2005
Job # SP-110
LOP # 12509

February 6, 2006

**Big Oil & Tire – Blue Lake BP (Blue Lake 76)** 291 Blue Lake Boulevard Blue Lake, California 95525

This *Quarterly Groundwater Monitoring Report* was prepared for Big Oil & Tire Co. (BO&T) by SounPacific staff and includes data from previous studies by Clearwater Group, Inc. (CGI) and relevant information from a review of the files at Humboldt County Division of Environmental Health (HCDEH). The site is located at 291 Blue Lake Boulevard, Blue Lake, California (Figure 1).

## **SITE DESCRIPTION**

The site is surfaced around the current structure with concrete and asphalt. Site improvements include a single story building with an attached warehouse and three (3) dispenser islands. The building is used as a mini-mart and the warehouse is used for storage. An apartment building is located adjacent to the north of the mini-mart. The main structures are positioned on the northern property line with the entrance to the mini-mart facing south towards Blue Lake Boulevard (Figure 2).

There is currently one (1) 12,000 gallon regular unleaded gasoline underground storage tank (UST) and one (1) 12,000 gallon split-compartment UST containing premium unleaded gasoline and diesel fuel, which were installed on March 24, 2004 (Figure 2). Three (3) 5,000 gallon USTs that contained regular unleaded gasoline, mid-grade unleaded gasoline, and diesel fuel, and a 2,000 gallon UST that contained premium unleaded gasoline were removed from the site on March 19, 2004. Surface water runoff is controlled by drainage ditches and municipal storm sewers. All electrical and telephone lines are positioned above the ground surface (Figure 2).

## SITE TOPOGRAPHY AND LAND USE

The elevation of the site is approximately 125 feet above mean sea level (amsl). The site and surrounding properties slope gently in a south and westerly direction toward the Mad River, which is located approximately one (1) mile south of the site. Surface water appears to drain in a southerly direction. Surrounding topography rises steeply to the north (Figure 1). The surrounding land use in the immediate vicinity is a mixture of commercial and residential. The Blue Lake Burger Barn resides adjacent and to the east of the site. Blue Lake Boulevard borders the south side of the property line. Elgar's Apartments is adjacent to the west of the site. Residential properties are located to the south of the property.

## **SITE HISTORY**

Previous studies overseen by Clearwater Group, Inc. (CGI) and SounPacific indicated the following historical information:

## 1994 Product Line Repair (Beacom)

On September 28, 1994, Paul Dalka of HCDEH observed Beacom Construction of Fortuna, California (Beacom) conduct repairs on the product line leading to the regular unleaded gasoline dispenser that was initiated in response to a loss of prime to the pump. A subsequent leak test indicated that a leak in the line was present. At that time, three (3) soil samples (BP Blue #1 to

#3) were collected at depths between one (1) and two (2) feet below ground surface (bgs) from an excavated trench adjacent to the product line (Figure 3). Elevated levels of TPHg and BTXE were detected at all three (3) sample locations (Table 1). No groundwater samples were collected.

#### 1997 Subsurface Investigation (CGI)

On March 27, 1997, CGI performed a subsurface investigation at the site to evaluate hydrocarbons levels in the soil and groundwater adjacent to the USTs' associated piping. Four (4) direct push soil borings (B-1, B-2, MW-1, and MW-3) were drilled, with groundwater monitoring wells installed at locations of MW-1, and MW-3 (Figure 3). Monitoring well MW-2 was not installed during this event. Soil samples were collected from each boring and the results of the analyses indicated that the soil near the USTs and the southern dispenser island was impacted with TPHg contamination (Table 1). In a letter dated January 8, 1998, HCDEH requested a work plan from BO&T to determine the extent of the hydrocarbon plume.

## **2000** Subsurface Investigation (SounPacific)

On September 7, 2000, SounPacific performed a subsurface investigation at the site in accordance with the approved CGI *Work Plan Addendum*, submitted October 20, 1998. The objective of the investigation was to determine the vertical and horizontal extent of hydrocarbon contamination in the soil and groundwater near the USTs. The investigation consisted of the drilling of six (6) soil borings (B-3 through B-8) from which soil samples were collected at depths of five (5) foot intervals (Figure 3) (Table 1). Groundwater samples were also collected from each borehole (Table 2).

Laboratory analysis reported significantly elevated levels of TPHg and BTXE in the soil at boring B-8, southwest of the southern dispenser island. Lower concentrations were also reported in borings B-3 to B-5, located south of the USTs (Table 1). Soil contamination was primarily reported at a depth of 10 feet bgs. In the groundwater elevated levels of gasoline and diesel range hydrocarbon were detected in the groundwater samples from borings B-3, B-4, and B-8

(Table 2). As a result additional borings were proposed to further define the southern and eastern plume boundaries, along with two (2) additional monitoring wells in order to accurately determine the direction of groundwater flow. In a letter dated January 30, 2001, HCDEH concurred with SounPacific's recommendations and requested a work plan to determine the extent of contamination at the site.

## **2002** Subsurface Investigation (SounPacific)

On May 14, 2002, further subsurface investigations were conducted at Blue Lake 76, in accordance with SounPacific *Subsurface Investigation Workplan*, dated March 10, 2001. The investigation consisted of drilling five (5) soil borings (B-9 through B-13) (Figure 3) from which soil and groundwater samples were collected. Soil analytical results confirmed that the soil contamination was restricted to the area adjacent to the site's USTs (Table 1). Analysis of the groundwater determined that groundwater contamination had migrated to the south, offsite and across Blue Lake Boulevard. Boreholes B-10 through B-12 and an old disused domestic well DW-1, reported elevated hydrocarbon concentrations (Tables 2 and 3). Two (2) additional monitoring wells (MW-3 and MW-4) were also installed and a groundwater monitoring program was initiated. Based upon the results, SounPacific recommended further delineating the plume to the south. In a letter dated December 31, 2002, HCDEH concurred with this recommendation and requested a work plan to further delineate the soil and groundwater contamination.

#### **2004 UST Removal/Installation (Beacom)**

On March 19, 2004, Beacom removed four (4) USTs at the Blue Lake 76 site. SounPacific staff was onsite for portions of the excavation activity. The USTs were removed in two separate excavations, one (Main Pit) in the eastern portion of the site that contained three (3) USTs used to store the unleaded gasoline, mid-grade gasoline, and diesel fuel, and an excavation in the central area of the site (Super Pit) that contained the premium gasoline. During the excavation activities monitoring well MW-1 was destroyed. Also, in accordance with the approved *Excavation Workplan*, dated December 11, 2003, additional excavation was conducted to allow for the installation of a new UST system, and to remove the identified soil contamination.

Following the removal of the USTs, seven (7) soil samples (1-North, 1-South, 2-South, 2-North, 3-South, 4-South, and 1-Sidewall) were collected from the sidewalls adjacent to the ends of the USTs. Laboratory analysis did not report any contamination above the method detection limits (Table 1). Two (2) groundwater samples (Super Pit and Main Pit) were collected from the excavation pits. Laboratory analysis reported elevated levels of petroleum hydrocarbons in the Main Pit groundwater sample (Table 2).

Following the removal of the UST system, during the period of March 20 through March 24, 2004, Beacom removed additional soil from the Main Pit to allow for the installation of the new UST system and the removal of contaminated soil that had been visually observed in the base of the excavation. No soil samples were collected at the vertical extent of the excavation as the excavation had to be backfilled immediately to preserve the integrity of onsite structures, however, significant contamination, including possible free phase product, was observed by Beacom personnel at a depth of approximately 12 feet bgs. Laboratory analysis of ten soil samples from the stockpiled excavated material reported high levels of both TPHg and TPHd, ranging from 10<sup>4</sup> to 10<sup>5</sup> ppm. At the lateral limits of the excavation, SounPacific collected seven (7) soil samples (BL 76 EX-1 through BL 76 EX-7). Analytical results of the two (2) soil samples (BL 76 EX-3 and BL 76 EX-4), both collected at 10 feet bgs, from the northern extent of the excavation, indicated that further excavation was necessary to the north; however, excavation was impeded due to the presence of onsite structures. In addition, further excavation was necessary in the southwest portion of the excavation, in the vicinity of the two (2) soil samples (BL EX-5 and BL 76 EX-6), collected at eight (8) feet and nine (9) feet bgs, respectively. However excavation in this area was not possible because further excavation would have made the installation of the new USTs impossible due to the space requirements of the equipment used in the UST system installation. In addition, further excavation was not possible due to lack of additional onsite storage space for excavated soils. Approximately 1,000 tons of impacted soil was excavated and disposed of at an offsite licensed facility.

### **2004** Subsurface Investigation (SounPacific)

During the period of May 24 through May 28, 2004, SounPacific staff performed a subsurface investigation at Blue Lake 76 to further define the hydrocarbon plume to the south of the site. The investigation was performed in accordance with the approved *Subsurface Investigation Workplan*, dated July 14, 2003, and the *Proposed Investigation (Figure 11) Second Revision*, dated January 22, 2004. The investigation consisted of drilling eight (8) soil borings (B-14 through B-21) (Figure 3) from which soil and groundwater samples were collected (Tables 1 and 2).

Laboratory analysis reported elevated levels of TPHg contamination in soils collected from borings B-15 and B-21, which were located southwest and west of the previous southern dispenser island (Table 1). Elevated levels of contamination were reported in all groundwater samples, except from borings B-18 and B-19, which were located on a private residence to the south of the site (Table 2). The May 2004 site investigation confirmed the presence of the groundwater contamination, and determined that it had migrated at least 200 feet to the southwest, and on to adjacent properties on the south side of Blue Lake Boulevard. However, the full extent of the groundwater contamination was not determined; therefore SounPacific recommended additional investigation to determine the full downgradient extent. To provide a complete evaluation of the groundwater contamination distribution, SounPacific also recommended additional monitoring wells should be installed and a groundwater monitoring program implemented. In a letter dated February 2, 2005, HCDEH concurred with the recommendations and requested a work plan to delineate the groundwater plume and move the site towards remediation. The implementation of the work was delayed until further groundwater monitoring and evaluation had been conducted.

## **RESULTS OF QUARTERLY SAMPLING**

A quarterly groundwater monitoring program was implemented by SounPacific on July 15, 2002 and will continue until further notice. SounPacific staff is currently conducting quarterly groundwater sampling events to monitor hydrocarbon concentrations onsite, and collecting

quarterly water level data to document any changes in groundwater levels and track any noticeable changes in groundwater gradient and direction of flow. Monitoring wells were gauged and sampled on October 25, 2005.

#### FIELD DATA

Wells gauged: MW-2, MW-3, and MW-4

**Groundwater:** Ranged from 112.93 to 115.98 feet above mean sea level (Figure 4)

**Sheen/Floating Product:** Sheen detected in MW-4

**Flow direction:** South Southeast (Figure 4)

**Groundwater gradient:** 0.05 feet per foot (ft/ft) (Figure 4)

On October 25, 2005, the depth to groundwater in the site's three (3) monitoring wells ranged from 8.93 feet below top of casing (btoc) in well MW-2 to 12.33 feet btoc in MW-3. When corrected to mean sea level, water level elevations ranged from 112.93 feet above mean sea level (amsl) in MW-3 to 115.98 feet amsl in MW-2. Groundwater levels for the October 25, 2005 monitoring event, along with historical level and elevations are included in Table 3. Groundwater flow was towards the south-southeast at a gradient of 0.05 feet per foot. The groundwater flow and gradient are graphically depicted in Figure 4. Prior to sampling, all wells were purged; the groundwater field purging parameters for each well are presented below.

#### MONITORING WELL MW-2 GROUNDWATER FIELD PARAMETERS

Time	Total Vol. Removed/ gal	рН	Temp./ F	Cond./ ms(cm) <sup>-1</sup>
3:26 pm	0	7.14	64.22	0.190
3:32	1.5	7.10	64.09	0.184
3:38	3.0	7.00	63.89	0.183
3:42	4.5	7.00	63.77	0.181

#### MONITORING WELL MW-3 GROUNDWATER FIELD PARAMETERS

Time	Total Vol. Removed/ gal	pН	Temp./ F	Cond./ ms(cm) <sup>-1</sup>
3:55 pm	0	7.12	65.32	0.271
4:03	1.1	7.01	65.03	0.272
4:06	2.2	7.00	65.07	0.269
4:14	3.3	7.06	65.21	0.258

#### **MONITORING WELL MW-4 GROUNDWATER FIELD PARAMETERS**

Time	Total Vol. Removed/ gal	pН	Temp./ F	Cond./ ms(cm) <sup>-1</sup>
4:32 pm	0	7.02	66.14	0.308
4:35	1.4	6.95	66.40	0.325
4:42	2.8	6.98	66.38	0.334
4:48	4.2	7.04	65.54	0.385

#### **ANALYTICAL RESULTS**

**Sampling locations:** MW-2, MW-3, and MW-4

**Analyses performed:** TPHg, BTXE, MTBE, DIPE, TAME, ETBE, TBA, TPHd, TPHmo

Laboratories Used: Basic Labs, Redding, California

On October 25, 2005, the three (3) onsite monitoring wells were sampled for laboratory analysis. In wells MW-2, MW-3, and MW-4, groundwater samples for analysis were collected following suitable well purging. The analytical results for the current monitoring event are presented on the following page and graphically depicted in Figure 5. The laboratory report is included as Appendix A. The historical analytical results for all monitoring wells, since the implementation of groundwater monitoring are included as Table 4.

	<u>MW-2</u> (ppb)	<u>MW-3</u> (ppb)	<u>MW-4</u> (ppb)
TPHg:	ND < 50	ND < 50	ND < 50
Benzene:	ND < 0.5	ND < 0.5	ND < 0.5
Toluene:	ND < 0.5	ND < 0.5	ND < 0.5
<b>Xylenes:</b>	ND < 1.0	ND < 1.0	ND < 1.0
Ethylbenzene:	ND < 0.5	ND < 0.5	ND < 0.5
MTBE:	ND < 1.0	ND < 1.0	47.0
DIPE:	ND < 0.5	ND < 0.5	ND < 0.5
TAME:	ND < 0.5	ND < 0.5	2.0
ETBE:	ND < 0.5	ND < 0.5	ND < 0.5
TBA:	ND < 50	ND < 50	ND < 50
TPHd:	ND < 50	ND < 50	115*
TPHmo:	55	ND < 50	103*

(ND= non-detectable)

• See Comments and Recommendations regarding these results

## **COMMENTS AND RECOMMENDATIONS**

On October 25, 2005, the *14th Quarterly Groundwater Monitoring Event* for the three (3) onsite monitoring wells was conducted at the Blue Lake 76 service station at 291 Blue Lake Boulevard in Blue Lake, California. A summary of the results are presented below:

- The depth to groundwater in the three (3) onsite wells ranged between 8.93 feet btoc (MW-2) to 12.33 feet btoc (MW-3). When corrected to sea level, the water level elevation ranged from 112.93 feet amsl in MW-3 to 115.98 feet amsl in MW-2. Groundwater flow was towards the south-southeast at a gradient of 0.05 ft/ft (Figure 4).
- Groundwater samples from the three (3) onsite wells were collected and analyzed for TPHg, BTXE, five-fuel oxygenates, TPHd, and TPHmo. No TPHg or BTEX were

reported in any of the three wells. MTBE was reported in well MW-4 at a concentration of 47.0 ppb. TAME was reported in well MW-4 at a concentration of 2.0 ppb. TPHd was reported at a concentration of 115 ppb in well MW-4. TPHmo was reported at a concentration of 55 ppb in well MW-2 and at a concentration of 103 ppb in well MW-4. The laboratory method blank was contaminated in the diesel and motor oil ranges at concentrations of 72 ppb and 82 ppb, respectively. Samples for wells MW-2 and MW-3 were re-analyzed, however, there was not enough remaining sample for re-analysis of well MW-4. Based on the results of both analyses for MW-3, it is believed that the results of TPHd and TPHmo analyses for well MW-4 were actually below the reporting limits. No other constituents were reported in any of the wells at or above the reporting limits.

Based upon these results the following observations and conclusions have been made:

- TPHg was detected once in well MW-2 during the first quarter 2004 monitoring event. TPHg has never been reported in well MW-3. TPHg has been non-detect in well MW-4 since the first quarter 2005. TPHg was reported in well DW-1 during ten out of ten sampling events, at concentrations greater than 10<sup>3</sup> ppb. The historical fluctuations of TPHg concentrations over time for all wells are shown in Figures 6, 7, 8, and 9.
- BTXE has never been detected in wells MW-2 and MW-3. With the exception of low levels of xylenes and ethylbenzene during the October 2004 monitoring event, BTXE concentrations have been non-detect in well MW-4 since the second quarter of 2003. In the disused domestic well, concentrations of BTXE have generally been present, however, concentrations have shown a reduction over time. See Figures 6 through 9.
- MTBE was present in all wells at the site until the first quarter 2005, when it was
  confined only to wells MW-4 and DW-1. MTBE concentrations have increased in well
  MW-4 since the previous quarter of monitoring, see Figures 6 through 9.

- TAME has been reported, at low levels, in three (3) of the thirteen sampling events in well MW-2, but has not been reported since October 2002. In well MW-3 TAME has never been reported. In well MW-4, TAME was reported during eight (8) of the last fourteen sampling events at low concentrations. TAME was detected in well DW-1 during the previous sampling event for the first time.
- TBA has not been reported since the first quarter of 2003 in monitoring well MW-4 (12 ppb).
- TPHd was detected during four (4) out of fourteen sampling events in well MW-2. TPHd was detected once in well MW-3 during the well installation sampling event and in well MW-4, where the concentrations of TPHd have been fairly consistent and have fluctuated over time. The domestic well DW-1 has reported consistent elevated concentrations (average of 2,000 ppb) of TPHd during nine (9) out of ten sampling events. The historical fluctuations of TPHd concentrations over time for all wells are shown in Figures 6 through 9.
- TPHmo was detected in well MW-2 during three (3) out of fourteen sampling events, including this quarter. TPHmo was detected in domestic well DW-1 in the previous quarter of sampling.

Based on the results of the October 2005 monitoring event, data interpretation, and historical results, the following future activities are proposed.

• Groundwater monitoring will be continued until further notice. Groundwater level measurements will be collected from the three (3) onsite monitoring wells to determine groundwater flow direction and gradient. Groundwater sampling and analysis will be conducted from the three (3) onsite wells and one (1) offsite domestic well. Collected groundwater samples from all the wells will be analyzed for TPHg, BTXE, five (5) fuel oxygenates/additives, TPHd, and TPHmo.

• The requested Subsurface Investigation Workplan was submitted to HCDEH on December 8, 2005. Based on discussions with HCDEH, SounPacific is currently preparing an addendum to the Work Plan. The Addendum is currently being prepared, and will be submitted in February 2006. The work will be scheduled following HCDEH approval and the receipt of access approval.

## CERTIFICATION

This report was prepared under the direct supervision of a California registered geologist at SounPacific. All information provided in this report including statements, conclusions and recommendations are based solely upon field observations and analyses performed by a state-certified laboratory. SounPacific is not responsible for laboratory errors.

SounPacific promises to perform all its work in a manner that is currently used by members in similar professions working in the same geographic area. SounPacific will do what ever is reasonable to ensure that data collection is accurate. Please note however, that rain, buried utilities, and other factors can influence groundwater depths, directions and other factors beyond what SounPacific could reasonably determine.

No. 07994

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## **ATTACHMENTS**

#### **TABLES & CHART**

Table 1: Soil Analytical Results

Table 2: Groundwater Analytical Results

Table 3: Water Levels

Table 4: Groundwater Analytical Results from Monitoring Wells

Chart 1: Hydrograph

#### **FIGURES**

Figure 1: Aerial / Topo Map

Figure 2: Site Plan

Figure 3: Sample Location Map

Figure 4: Groundwater Gradient Map October 2005

Figure 5: Groundwater Analytical Results

Figure 6: MW-2 Hydrocarbon Concentrations vs. Time

Figure 7: MW-3 Hydrocarbon Concentrations vs. Time

Figure 8: MW-4 Hydrocarbon Concentrations vs. Time

Figure 9: DW-1 Hydrocarbon Concentrations vs. Time

#### **APPENDICES**

Appendix A: Laboratory Report and Chain-of-Custody Form

Appendix B: Standard Operating Procedures

Appendix C: Field Notes

## **Tables & Chart**

#### Table 1 Soil Analytical Results

Blue Lake 76
291 Blue Lake Boulevard
Blue Lake, California 95525

Sample ID	Sample Location	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)	Ethylbenzene (ppm)	MTBE (ppm)	DIPE (ppm)	TAME (ppm)	ETBE (ppm)	TBA (ppm)	TPHd (ppm)	TPHmo (ppm)	Lead (ppm)
B.P. Blue #1		9/28/1994	490	.25	2.0	9.4	1.4								65
B.P. Blue #2		9/28/1994	490	.69	5.2	16.5	2.3								
B.P. Blue #3		9/28/1994	3.7	.1	.43	.26	.056								
B-1 @ 5.5'	B-1	3/27/1997	2.1	ND*	0.0054	0.031	0.014	0.016					ND*	ND*	9
B-1 @9.0'	B-1	3/27/1997	10	0.016	ND*	0.49	0.14	0.68					ND*	ND*	6.6
B-2 @ 5.0'	B-2	3/27/1997	ND*	ND*	ND*	ND*	ND*	ND*					16	360	7.6
B-2 @ 10.5'	B-2	3/27/1997	11	ND*	ND*	ND*	ND*	ND*					71	23	6.9
MW-1 @ 3.0'	MW-1	3/27/1997	15	0.044	0.029	0.93	0.031	0.23					ND*	11	8.3
MW-1 @ 7'	MW-1	3/27/1997	6	0.02	0.009	0.11	0.08	0.22					ND*	ND*	7.8
MW-2 @ 5.5'	MW-2	3/27/1997	ND*	ND*	ND*	0.013	ND*	ND*					ND*	ND*	8.4
MW-2 @ 10.5'	MW-2	3/27/1997	ND*	ND*	ND*	ND*	ND*	ND*					ND*	ND*	6
BL76B-3 @ 5'	B-3	9/7/2000	6.2	0.012	ND < 0.03	0.107	0.073	0.091					ND < 1.0	ND < 10	
BL76B-3 @ 10'	B-3	9/7/2000	6.8	ND < 0.005	ND < 0.04	ND < 0.04	0.019	ND < 0.05					ND < 1.0	ND < 10	
BL76B-3 @ 15'	B-3	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-3 @ 20'	B-3	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-4 @ 5'	B-4	9/7/2000	3.1	0.013	ND < 0.02	0.023	0.012	ND < 0.05					ND < 1.0	ND < 10	
BL76B-4 @ 10'	B-4	9/7/2000	6.0	ND < 0.005	ND < 0.03	0.021	0.0087	ND < 0.05					2.8	ND < 10	
BL76B-4 @ 15'	B-4	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-4 @ 20'	B-4	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-5 @ 5'	B-5	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-5 @ 10'	B-5	9/7/2000	4.8	0.0094	0.24	0.18	0.02	ND < 0.05					34	ND < 10	
BL76B-5 @ 15'	B-5	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-5 @ 20'	B-5	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-5 @ 25'	B-5	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	11	
BL76B-6 @ 5'	B-6	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-6 @ 10'	B-6	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-6 @ 15'	B-6	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-7 @ 5'	B-7	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-7 @ 10'	B-7	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	
BL76B-8 @ 5'	B-8	9/7/2000	1.9	ND < 0.005	ND < 0.005	0.057	0.0082	ND < 0.05					ND < 1.0	ND < 10	
BL76B-8 @ 10'	B-8	9/7/2000	1,400	ND < 0.06	ND < 4.0	121	21	ND < 0.25					33	ND < 10	
BL76B-8 @ 15'	B-8	9/7/2000	ND < 1.0	ND < 0.005	ND < 0.005	0.0092	ND < 0.005	ND < 0.05					ND < 1.0	ND < 10	

#### Table 1 (cont.) Soil Analytical Results

Blue Lake 76 291 Blue Lake Boulevard Blue Lake, California 95525

Sample ID	Sample Location	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)	Ethylbenzene (ppm)	MTBE (ppm)	DIPE (ppm)	TAME (ppm)	ETBE (ppm)	TBA (ppm)	TPHd (ppm)	TPHmo (ppm)	Lead (ppm)
SB-9 @ 4'	B-9	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-9 @ 8'	B-9	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-9 @ 12'	B-9	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-9 @ 16'	B-9	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-10 @ 4'	B-10	5/14/2002	0.488	0.019	ND < 0.005	ND < 0.015	ND < 0.005	0.014	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-10 @ 8'	B-10	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-10 @ 12'	B-10	5/14/2002	9.68	ND < 0.05	ND < 0.05	ND < 0.15	0.095	ND < 0.05	ND < 0.05	ND < 0.05	ND < 0.05	ND < 50			
SB-10 @ 16'	B-10	5/14/2002	1.1	ND < 0.005	0.005	0.02	0.063	0.270	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-11 @ 4'	B-11	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-11 @ 8'	B-11	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-11 @ 12'	B-11	5/14/2002	30.5	0.092	ND < 0.005	1.28	1.13	0.231	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-11 @ 16'	B-11	5/14/2002	29.2	0.197	0.012	0.554	0.931	0.0589	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-12 @ 8'	B-12	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-12 @ 12'	B-12	5/14/2002	0.427	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-12 @ 16'	B-12	5/14/2002	20.4	0.009	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-13 @ 4'	B-13	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-13 @ 8'	B-13	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-13 @ 12'	B-13	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-13 @ 16'	B-13	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
SB-13 @ 20'	B-13	5/14/2002	ND < 0.060	ND < 0.005	ND < 0.005	ND < 0.015	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 5.0			
1-North	UST PIT	3/19/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05							ND < 10
1-South	UST PIT	3/19/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05							ND < 10
2-South	UST PIT	3/19/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05							ND < 10
2-North	UST PIT	3/19/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05							ND < 10
3-South	UST PIT	3/19/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05					1.1		
4-South	UST PIT	3/19/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05							ND < 10
1-Sidewall	UST PIT	3/19/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.01	ND < 0.005	ND < 0.05							ND < 10
BL 76 EX-1	EXCAVATION	3/24/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.05	ND < 1.0		6.6
BL 76 EX-2	EXCAVATION	3/24/2004	ND < 1.0	ND < 0.005	0.009	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.05	ND < 1.0		7.2
BL 76 EX-3	EXCAVATION	3/24/2004	580	5.9	36	4.9	2.4	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 10	35		6.3
BL 76 EX-4	EXCAVATION	3/24/2004	860	12	87	7.1	3.1	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 10	820		6.7
BL 76 EX-5	EXCAVATION	3/24/2004	260	2.5	25	1.6	1.4	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 10	14		8.2
BL 76 EX-6	EXCAVATION	3/24/2004	36	ND < 0.1	8.8	0.24	0.12	ND < 0.25	ND < 0.25	ND < 0.25	ND < 0.25	ND < 2.5	120		6.6
BL 76 EX-7	EXCAVATION	3/24/2004	ND < 1.0	ND < 0.005	0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.05	1.6		7.6

Notes:

TPHg: Total petroleum hydrocarbons as gasoline.

MTBE: Methyl tertiary butyl ether DIPE: Diisopropyl ether

TAME: Tertiary amyl methyl ether ETBE: Ethyl tertiary butyl ether TPHmo: Total petroleum hydrocarbons as motor oil.

TBA: Tertiary butanol

TPHd: Total petroleum hydrocarbons as diesel.

ppm: parts per million =  $\mu g/g = mg/kg = 1000 \mu g/kg$ 

ND: Not detected. Sample was detected below the method detection limit as shown.

ND\*: Not detected. Method detection limit unknown.

#### Table 1 (cont.) Soil Analytical Results

Blue Lake 76 291 Blue Lake Boulevard Blue Lake, California 95525

Sample ID	Sample Location	Sample Date	TPHg (ppm)	Benzene (ppm)	Toluene (ppm)	Xylenes (ppm)	Ethylbenzene (ppm)	MTBE (ppm)	DIPE (ppm)	TAME (ppm)	ETBE (ppm)	TBA (ppm)	TPHd (ppm)	TPHmo (ppm)
SB-14 @ 3'	B-14	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	0.013	ND < 0.005	0.027	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	16
SB-14 @ 8'	B-14	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	0.012	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	1.5	ND < 10
SB-14 @ 12'	B-14	5/26/2004	ND < 93	ND < 0.93	ND < 0.93	5.7	1.1	ND < 0.93	ND < 0.93	ND < 0.93	ND < 0.93	ND < 9.3	9.1	ND < 10
SB-14 @ 14'	B-14	5/26/2004	ND < 100	ND < 1.0	ND < 1.0	5.7	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 10	49	640
SB-14 @ 15'	B-14	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	0.040	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	ND < 10
SB-15 @ 1'	B-15	5/26/2004	ND < 110	ND < 1.1	ND < 1.1	5.9	ND < 1.1	ND < 1.1	ND < 1.1	ND < 1.1	ND < 1.1	ND < 11	5.0	ND < 10
SB-15 @ 4'	B-15	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	0.048	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	ND < 10
SB-15 @ 8'	B-15	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	0.056	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	ND < 10
SB-15 @ 11'	B-15	5/26/2004	1,500	ND < 1.8	ND < 1.8	15.8	12	ND < 1.8	ND < 1.8	ND < 1.8	ND < 1.8	ND < 18	640	ND < 10
SB-15 @ 15'	B-15	5/26/2004	ND < 59	ND < 0.59	ND < 0.59	7.0	1.1	ND < 0.59	ND < 0.59	ND < 0.59	ND < 0.59	ND < 5.9	2.1	ND < 10
SB-16 @ 12.5'	B-16	5/26/2004	160	ND < 1.3	ND < 1.3	7.5	1.3	ND < 1.3	ND < 1.3	ND < 1.3	ND < 1.3	ND < 13	10	ND < 10
SB-16 @ 15'	B-16	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	0.12	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	ND < 10
SB-17 @ 11'	B-17	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	ND < 10
SB-20 @ 4'	B-20	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	ND < 10
SB-20 @ 8'	B-20	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	ND < 10
SB-20 @ 11'	B-20	5/26/2004	1.2	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	0.008	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	7.3	ND < 10
SB-20 @ 13'	B-20	5/26/2004	1.7	ND < 0.005	ND < 0.005	0.007	0.009	0.008	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	130	ND < 200
SB-20 @ 14'	B-20	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	0.081	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	1.7	ND < 10
SB-21 @ 4'	B-21	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	ND < 10
SB-21 @ 8'	B-21	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	0.005	ND < 0.005	0.006	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	ND < 10
SB-21 @ 11'	B-21	5/26/2004	1,100	ND < 0.005	0.009	13.8	5.6	0.013	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	670	ND < 10
SB-21 @ 14'	B-21	5/26/2004	2.6	ND < 0.005	ND < 0.005	0.081	0.095	0.016	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	2.1	ND < 10
SB-21 @ 16'	B-21	5/26/2004	ND < 1.0	ND < 0.005	ND < 0.005	ND < 0.010	ND < 0.005	0.047	ND < 0.005	ND < 0.005	ND < 0.005	ND < 0.050	ND < 1.0	ND < 10

Notes:
TPHg: Total petroleum hydrocarbons as gasoline.

MTBE: Methyl tertiary butyl ether

DIPE: Diisopropyl ether

TAME: Tertiary amyl methyl ether

ETBE: Ethyl tertiary butyl ether

TPHmo: Total petroleum hydrocarbons as motor oil.

TBA: Tertiary butanol

TPHd: Total petroleum hydrocarbons as diesel.

ppm: parts per million =  $\mu g/g = mg/kg = 1000 \ \mu g/kg$ 

ND: Not detected. Sample was detected below the method detection limit as shown.

#### Table 2 **Groundwater Analytical Results**

Blue Lake 76 291 Blue Lake Boulevard Blue Lake, California 95525

Sample ID	Sample Location	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	DBE (ppb)	DCE (ppb)	TPHd (ppb)	TPHmo (ppb)	Lead (ppb)
BL76B-3 @ 17.5' GW	B-3	9/7/2000	550	3.8	0.67	6.7	8.7	540	ND < 1.0	3.6	ND < 1.0	82	ND < 4	ND < 1.0	ND < 50	ND < 170	NT
BL76B-4 @ 21' GW	B-4	9/7/2000	140	0.83	0.52	ND < 1.0	ND < 0.5	16	ND < 1.0	ND < 1	ND < 1.0	17	ND < 2.0	ND < 1.0	3,700	2,700	NT
BL76B-5 @ 26' GW	B-5	9/7/2000	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 1.0	ND < 1	ND < 1.0	ND < 10	ND < 2.0	ND < 1.0	ND < 50	ND<170	NT
BL76B-6 @ 10.8' GW	B-6	9/7/2000	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 1.0	ND < 1	ND < 1.0	ND < 10	ND < 2.0	ND < 1.0	53	ND<170	NT
BL76B-7 @ 8.1' GW	B-7	9/7/2000	51	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	0.84	ND < 1.0	ND < 1	ND < 1.0	ND < 10	ND < 2.0	ND < 1.0	ND < 50	ND<170	NT
BL76B-8 @ 12' GW	B-8	9/7/2000	2,500	4.1	6.1	480	110	77	ND < 2.5	13	ND < 2.5	ND < 25	ND < 10	ND < 2.5	210	ND<170	NT
GW SB-9 @ 16'	B-9	5/14/2002	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	ND < 2.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 40	ND < 0.5	ND < 0.5	ND < 50	ND < 50	NT
GW SB-10 @ 16'	B-10	5/14/2002	2,530	ND < 0.3	ND < 0.3	7.6	26.9	758	ND < 0.5	ND < 0.5	ND < 0.5	ND < 40	ND < 0.5	ND < 0.5	818	ND < 50	NT
GW SB-11 @ 16'	B-11	5/14/2002	10,600	258	8.3	119	240	4,130	ND < 0.5	ND < 0.5	ND < 0.5	ND < 40	ND < 0.5	ND < 0.5	868	ND < 50	NT
GW SB-12 @ 16'	B-12	5/14/2002	7,890	ND < 30	ND < 30	ND < 60	ND < 30	71.8	ND < 30	ND < 50	ND < 50	ND < 4,000	ND < 50	ND < 50	178,000	ND < 2,500	NT
GW SB-13 @ 20'	B-13	5/14/2002	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	ND < 2.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 40	ND < 0.5	ND < 0.5	ND < 50	ND < 50	NT
DW-1	DW-1	5/14/2002	4,410	72.3	20.6	241	197	385	ND < 0.5	ND < 0.5	ND < 0.5	ND < 40	ND < 0.5	ND < 0.5	2,100	ND < 50	NT
Super Pit	UST PIT	3/19/2004	N/Q > 2,000	N/Q > 10	N/Q > 10	N/Q > 30	N/Q > 10	ND < 30									50
Main Pit	UST PIT	3/19/2004	8,000	420	67	272	330	220							3,900,000		3,800
SBGW-14	B-14	5/26/2004	1,700	5.7	2.1	83.6	65	40	ND < 0.5	1.6	ND < 0.5	ND < 5.0			950	ND < 500	
SBGW-15	B-15	5/26/2004	4,100	6.6	2.4	95.6	160	2,100	ND < 0.5	11	33	66			400	ND < 500	
SBGW-16	B-16	5/28/2004	2,300	1.7	0.6	1.0	8.8	470	ND < 0.5	7.5	10	57			890	ND < 500	
SBGW-18	B-18	5/28/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	3.3	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0			ND < 50	ND < 500	
SBGW-19	B-19	5/28/2004	ND < 50	ND < 0.5	0.8	ND < 1.0	ND < 0.5	41	ND < 0.5	ND < 0.5	1.3	ND < 5.0				ND < 500	
SBGW-20	B-20	5/26/2004	2,800	ND < 10	ND < 10	ND<20	10	24	ND < 10	ND < 10	ND < 10	ND < 100			14,000	ND < 500	
SBGW-21	B-21	5/26/2004	8,700	5.5	ND < 5.0	307	250	44	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50.0			2,100	ND < 500	

Notes:

TPHg: Total petroleum hydrocarbons as gasoline.

MTBE: Methyl tertiary butyl ether

DIPE: Diisopropyl ether

TAME: Tertiary amyl methyl ether ETBE: Ethyl tertiary butyl ether

TPHmo: Total petroleum hydrocarbons as motor oil.

TBA: Tertiary butanol

TPHd: Total petroleum hydrocarbons as diesel.

DBE: 1,2-dibromoethane DCE:1,2-dichloroethane

N/Q: Not quantifiable due to high concentration of analyte. Sample was detected above the concentration indicated.

ppb: parts per billion =  $\mu g/l = .001 \text{ mg/l} = 0.001 \text{ ppm}$ .

ND: Not detected. Sample was detected below the method detection limit as shown.

### Table 3 Water Levels

Blue Lake 76 291 Blue Lake Boulevard Blue Lake, California 95525

Sample Location	Date	Depth to Bottom/ Feet BGS	Survey Height/ Feet Above MSL		Adjusted Elevation/ Feet Above MSL	Thickness of Floating Product / Feet
	5/19/2002	15.26	125.50	8.35	117.15	0.00
	6/16/2002	15.26	125.50	8.62	116.88	0.00
	7/16/2002	15.30	125.50	8.98	116.52	0.00
	8/19/2002	15.25	125.50	9.43	116.07	0.00
	9/11/2002	15.31	125.50	9.57	115.93	0.00
	10/14/2002	15.26	125.50	9.59	115.91	0.00
	11/15/2002	15.29	125.50	8.95	116.55	0.00
MW-1	12/16/2002	15.24	125.50	7.82	117.68	0.00
	1/16/2003	15.29	125.50	8.11	117.39	0.00
	2/14/2003	15.30	125.50	8.15	117.35	0.00
	3/12/2003	15.28	125.50	8.13	117.37	0.00
	4/13/2003	15.21	125.50	8.12	117.38	0.00
	7/13/2003	19.12	125.50	8.99	116.51	0.00
	10/22/2003	15.21	125.50	9.11	116.39	0.00
	1/26/2004	15.21	125.50	8.14	117.36	0.00
	5/19/2002	18.24	124.91	8.72	116.19	0.00
	6/16/2002	18.24	124.91	9.09	115.82	0.00
	7/16/2002	18.21	124.91	9.48	115.43	0.00
	8/19/2002	18.18	124.91	9.61	115.30	0.00
	9/11/2002	18.24	124.91	9.63	115.28	0.00
	10/14/2002	18.21	124.91	9.66	115.25	0.00
	11/15/2002	18.22	124.91	8.72	116.19	0.00
	12/16/2002	18.19	124.91	6.93	117.98	0.00
	1/16/2003	18.23	124.91	7.34	117.57	0.00
	2/14/2003	18.25	124.91	8.07	116.84	0.00
MW-2	3/12/2003	18.22	124.91	8.20	116.71	0.00
	4/13/2003	18.15	124.91	8.05	116.86	0.00
	7/13/2003	18.11	124.91	9.20	115.71	0.00
	10/22/2003	18.11	124.91	9.18	115.73	0.00
	1/26/2004	18.11	124.91	7.34	117.57	0.00
	7/31/2004	18.40	124.91	9.85	115.06	0.00
	10/31/2004	18.13	124.91	8.32	116.59	0.00
	1/29/2005	18.41	124.91	7.31	117.60	0.00
	5/14/2005	18.16	124.91	8.04	116.87	0.00
	7/18/2005	18.15	124.91	8.75	116.16	0.00
	10/25/2005	18.16	124.91	8.93	115.98	0.00

#### Table 3 (cont.) Water Levels

Blue Lake 76 291 Blue Lake Boulevard Blue Lake, California 95525

	<u> </u>		Survey		Adjusted	
		Depth to	Height/	Depth to	Elevation/	Thickness
Sample	Date	Bottom/	Feet	Water/	Feet	of Floating
Location	Date	Feet BGS	Above	Feet BGS	Above	Product /
		reet bGS	MSL	reet bus	MSL	Feet
	5/19/2002	18.98	125.26	8.77	116.49	0.00
	6/16/2002	18.98	125.26	9.09	116.17	0.00
	7/16/2002	18.98	125.26	10.55	114.71	0.00
	8/19/2002	18.97	125.26	13.65	111.61	0.00
	9/11/2002	18.99	125.26	14.65	110.61	0.00
	10/14/2002	18.97	125.26	15.47	109.79	0.00
	11/15/2002	19.01	125.26	10.62	114.64	0.00
	12/16/2002	19.25	125.26	9.69	115.57	0.00
	1/16/2003	19.00	125.26	8.44	116.82	0.00
	2/14/2003	19.00	125.26	8.56	116.70	0.00
MW-3	3/12/2003	19.05	125.26	8.10	117.16	0.00
	4/13/2003	18.91	125.26	8.06	117.20	0.00
	7/13/2003	19.18	125.26	9.11	116.15	0.00
	10/22/2003	19.18	125.26	15.12	110.14	0.00
	1/26/2004	19.18	125.26	8.93	116.33	0.00
	7/31/2004	19.18	125.26	12.47	112.79	0.00
	10/31/2004	19.20	125.26	9.70	115.56	0.00
	1/29/2005	19.21	125.26	8.91	116.35	0.00
	5/14/2005	19.25	125.26	8.53	116.73	0.00
	7/18/2005	19.21	125.26	8.95	116.31	0.00
	10/25/2005	19.22	125.26	12.33	112.93	0.00
	5/19/2002	19.17	124.07	10.80	113.27	0.00
	6/16/2002	19.18	124.07	10.32	113.75	0.00
	7/16/2002	19.18	124.07	10.39	113.68	0.00
	8/19/2002	19.17	124.07	10.39	113.68	0.00
	9/11/2002	19.21	124.07	10.67	113.40	0.00
	10/14/2002	19.17	124.07	10.52	113.55	0.00
	11/15/2002	19.20	124.07	10.21	113.86	0.00
	12/16/2002	19.47	124.07	9.96	114.11	0.00
	1/16/2003	19.21	124.07	9.98	114.09	0.00
	2/14/2003	19.19	124.07	10.82	113.25	0.00
MW-4	3/12/2003	19.27	124.07	10.37	113.70	0.00
	4/13/2003	19.11	124.07	9.91	114.16	0.00
	7/13/2003	19.39	124.07	10.67	113.40	0.00
	10/22/2003	19.39	124.07	10.73	113.34	0.00
	1/26/2004	19.39	124.07	10.95	113.12	0.00
	4/28/2004	19.39	124.07	10.65	113.42	0.00
	7/31/2004	19.38	124.07	10.75	113.32	0.00
	10/31/2004	19.39	124.07	10.79	113.28	0.00
	1/29/2005	19.42	124.07	9.90	114.17	0.00
	5/14/2005	19.43	124.07	10.34	113.73	0.00
	7/18/2005	19.41	124.07	10.96	113.11	0.00
	10/25/2005	19.43	124.07	10.73	113.34	0.00

Bgs: Below Ground Surface MSL: Mean Sea Level

## Table 4 Groundwater Analytical Results from Monitoring Wells Blue Lake 76 291 Blue Lake Boulevard

Blue Lake, California 95525

Sample Location	Sample Event	Annual Quarter	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	TPHd (ppb)	TPHmo (ppb)	EDB (ppb)	EDC (ppb)
	Well Installation	2nd Quarter	5/19/2002	1,220	19.1	2.7	29.1	48	242	ND < 0.5	ND < 0.5	ND < 0.5	ND < 40	464	ND < 50	ND < 0.5	ND < 0.5
	1st Quarterly	3rd Quarter	7/16/2002	225	2.6	0.6	1.0	2.0	227	ND < 0.5	9.2	ND < 0.5	ND < 100	ND < 50	ND < 50	ND < 0.5	
	2nd Quarterly	4th Quarter	10/14/2002	ND < 1,000	ND < 6.0	ND < 6.0	ND < 6.0	ND < 6.0	151	ND < 10	ND < 10	ND < 10	ND < 2,000	ND < 50	ND < 50	ND < 10	ND < 10
2007.1	3rd Quarterly	1st Quarter	1/16/2003	6,500	45	7.4	42.8	100	400	ND < 5.0	9.3	ND < 5.0	500	750	ND < 500	ND < 5.0	ND < 5.0
MW-1	4th Quarterly	2nd Quarter	4/13/2003	3,000	14	ND < 5.0	6.3	28	210	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50	300	ND < 500		
	5th Quarterly	3rd Quarter	7/13/2003	450	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	210	ND < 0.5	5.1	ND < 0.5	130	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	6th Quarterly	4th Quarter	10/22/2003	180	ND < 5.0	ND < 5.0	ND < 10.0	ND < 5.0	110	ND < 5.0	ND < 5.0	ND < 5.0	79	ND < 50	ND < 500	ND < 5.0	ND < 5.0
	7th Quarterly	1st Quarter	1/26/2004	1,400	25	ND < 5.0	7.1	39	86	ND < 5.0	ND < 5.0	ND < 5.0	ND < 50	ND < 50	ND < 500	ND < 5.0	ND < 5.0
	Well Installation	2nd Quarter	5/19/2002	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	37.2	ND < 0.5	1.6	ND < 0.5	ND < 40	ND < 50	ND < 50	ND < 0.5	ND < 0.5
	1st Quarterly	3rd Quarter	7/16/2002	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	47.6	ND < 0.5	1.1	ND < 0.5	ND < 100	ND < 50	ND < 50	ND < 0.5	ND < 0.5
	2nd Quarterly	4th Quarter	10/14/2002	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	19.2	ND < 0.5	0.8	ND < 0.5	ND < 100	ND < 50	ND < 50	ND < 0.5	ND < 0.5
	3rd Quarterly	1st Quarter	1/16/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	3.2	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	4th Quarterly	2nd Quarter	4/13/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	3.8	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500		
	5th Quarterly	3rd Quarter	7/13/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	3.7	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	ND < 500	ND < 0.5	ND < 0.5
MW-2	6th Quarterly	4th Quarter	10/22/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	2.1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
IVI VV -2	7th Quarterly	1st Quarter	1/26/2004	85	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	0.7	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
-	9th Quarterly	3rd Quarter	7/31/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	1.6	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	87	ND < 500		
	10th Quarterly	4th Quarter	10/31/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.5	ND < 0.5	0.8	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	96	ND < 500		
	11th Quarterly	1st Quarter	1/29/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 5.0	ND < 5.0	ND < 50	67	99		
	12th Quarterly	2nd Quarter	5/14/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	55	61		
	13th Quarterly	3rd Quarter	7/18/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	ND < 50	ND < 50		
	14th Quarterly	4th Quarter	10/25/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50.0	ND < 50	55		
	Well Installation	2nd Quarter	5/19/2002	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	ND < 2.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 40	440	ND < 50	ND < 0.5	ND < 0.5
	1st Quarterly	3rd Quarter	7/16/2002	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	2.1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 100	ND < 50	ND < 50	ND < 0.5	ND < 0.5
	2nd Quarterly	4th Quarter	10/14/2002	ND < 50	ND < 0.3	ND < 0.3	ND < 0.6	ND < 0.3	2.1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 100	ND < 50	ND < 50	ND < 0.5	ND < 0.5
	3rd Quarterly	1st Quarter	1/16/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	7.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	4th Quarterly	2nd Quarter	4/13/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	0.7	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500		
	5th Quarterly	3rd Quarter	7/13/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	0.6	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	ND < 500	ND < 0.5	ND < 0.5
MW-3	6th Quarterly	4th Quarter	10/22/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	2.3	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	7th Quarterly	1st Quarter	1/26/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	0.9	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	9th Quarterly	3rd Quarter	7/31/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	1.2	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500		
	10th Quarterly	4th Quarter	10/31/2004	ND < 50	ND < 0.5	ND < 0.5	ND < 1.5	ND < 0.5	1.1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500		
	11th Quarterly	1st Quarter	1/29/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 5.0	ND < 5.0	ND < 50	ND < 50	ND < 50		
	12th Quarterly	2nd Quarter	5/14/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	ND < 50	ND < 50		
	13th Quarterly	3rd Quarter	7/18/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	ND < 50	ND < 50		
	14th Quarterly	4th Quarter	10/25/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	ND < 1.0	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	ND < 50	ND < 50		

#### Table 4 (cont.)

#### **Groundwater Analytical Results from Monitoring Wells**

Blue Lake 76 291 Blue Lake Boulevard Blue Lake, California 95525

Sample Location	Sample Event	Annual Quarter	Sample Date	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)	Ethylbenzene (ppb)	MTBE (ppb)	DIPE (ppb)	TAME (ppb)	ETBE (ppb)	TBA (ppb)	TPHd (ppb)	TPHmo (ppb)	EDB (ppb)	EDC (ppb)
	Well Installation	2nd Quarter	5/19/2002	2,450	4.6	2,2	236	154	107	ND < 0.5	ND < 0.5	ND < 0.5	ND < 40	363	ND < 50	ND < 0.5	ND < 0.5
	1st Quarterly	3rd Quarter	7/16/2002	1,070	ND < 6.0	ND < 6.0	26.3	81.8	141	ND < 10	ND < 10	ND < 10	ND < 2,000	ND < 50	ND < 50	ND < 10	ND < 10
	2nd Quarterly	4th Quarter	10/14/2002	535	2.0	ND < 0.3	ND < 0.6	1.8	73.6	ND < 0.5	5.0	ND < 0.5	ND < 100	538	ND < 50	ND < 0.5	ND < 0.5
	3rd Quarterly	1st Quarter	1/16/2003	260	0.6	ND < 0.5	ND < 1.0	ND < 0.5	100	ND < 0.5	3.0	ND < 0.5	12	53	ND < 500	ND < 0.5	ND < 0.5
	4th Quarterly	2nd Quarter	4/13/2003	66	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	25	ND < 0.5	0.7	ND < 0.5	ND < 5.0	ND < 50	ND < 500		
	5th Quarterly	3rd Quarter	7/13/2003	ND < 50	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	17	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	6th Quarterly	4th Quarter	10/22/2003	430	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	68	ND < 0.5	ND < 0.5	ND < 0.5	ND < 5.0	76	ND < 500	ND < 0.5	ND < 0.5
MW-4	7th Quarterly	1st Quarter	1/26/2004	71	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	22	ND < 0.5	0.8	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	8th Quarterly	2nd Quarter	4/28/2004	51	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	15	ND < 0.5	0.5	ND < 0.5	ND < 5.0	ND < 50	ND < 500	ND < 0.5	ND < 0.5
	9th Quarterly	3rd Quarter	7/31/2004	140	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	28	ND < 0.5	1.4	ND < 0.5	ND < 5.0	110	ND < 500		
	10th Quarterly	4th Quarter	10/31/2004	100	ND < 0.5	ND < 0.5	1.3	0.5	76	ND < 0.5	3.5	ND < 0.5	ND < 5.0	82	ND < 500		
	11th Quarterly	1st Quarter	1/29/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	23.3	ND < 0.5	ND < 5.0	ND < 5.0	ND < 50	ND < 50	ND < 50		
	12th Quarterly	2nd Quarter	5/14/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	12.2	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	ND < 50	ND < 50		
	13th Quarterly	3rd Quarter	7/18/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	8.3	ND < 0.5	ND < 0.5	ND < 0.5	ND < 50	ND < 50	ND < 50		
	14th Quarterly	4th Quarter	10/25/2005	ND < 50	ND < 0.5	ND < 0.5	ND < 1.0	ND < 0.5	47.0	ND < 0.5	2.0	ND < 0.5	ND < 50	115*	103*		
	3rd Quarterly	1st Quarter	1/16/2003	16,000	39	11	460	130	180					2,500			
	4th Quarterly	2nd Quarter	4/13/2003	4,200	25	5.1	239	31	130					2,200			
	5th Quarterly	3rd Quarter	7/13/2003	10,000	46	10	416	190	480					3,200			
	6th Quarterly	4th Quarter	10/22/2003	5,200	29	ND < 5.0	218	39	880					1,200			
DW-1	7th Quarterly	1st Quarter	1/26/2004	5,500	19	ND < 5.0	152	ND < 5.0	79					ND < 50			
DW-1	8th Quarterly	2nd Quarter	4/28/2004	7,300	21	ND < 5.0	128	55	100					3,000			
	9th Quarterly	3rd Quarter	7/31/2004	5,200	23	3.9	168	55	580					3,300			
	10th Quarterly	4th Quarter	10/31/2004	4,400	25	5.0	175	50	160	ND < 5.0	ND < 5.0	5.8	ND < 50	2,300	ND < 500		
	11th Quarterly	1st Quarter	1/29/2005	1,120	9.3	2.2	53.5	32.0	47.5	ND < 0.5	ND < 5.0	ND<5.0	ND<50	1,780	ND < 50		
	13th Quarterly	3rd Quarter	9/5/2005	1,640	9.8	2.0	46.2	15.9	380	ND < 1.2	4.6	16.3	ND < 125	3,580	1,040		

Notes

TPHg: Total petroleum hydrocarbons as gasoline MTBE: Methyl tertiary butyl ether DIPE: Disopropyl ether TAME: Tertiary amyl methyl ether TPHd: Total petroleum hydrocarbons as diesel

EDB: 1,2-Dibromoethane
EDC: 1,2-Dichloroethane

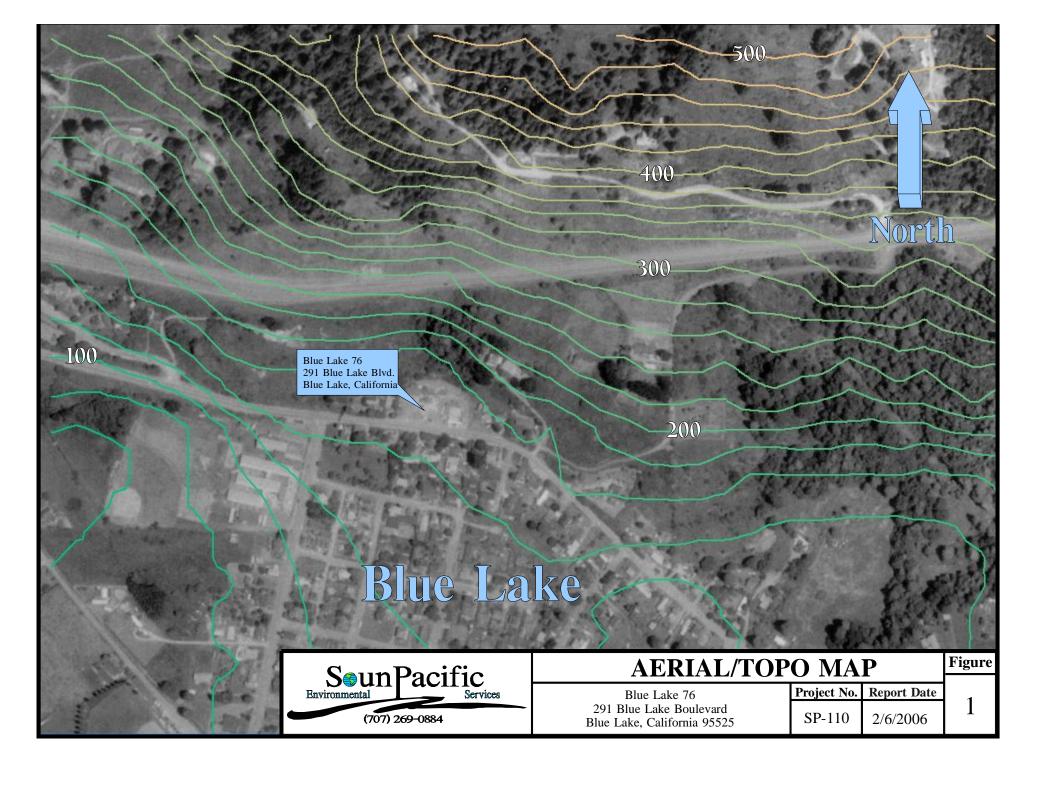
TBA: Tertiary butanol ETBE: Ethyl tertiary butyl ether TPHmo: Total petroleum hydrocarbons as motor oil ppb: parts per billion =  $\mu g/1 = .001 \ mg/1 = 0.001 \ ppm$ 

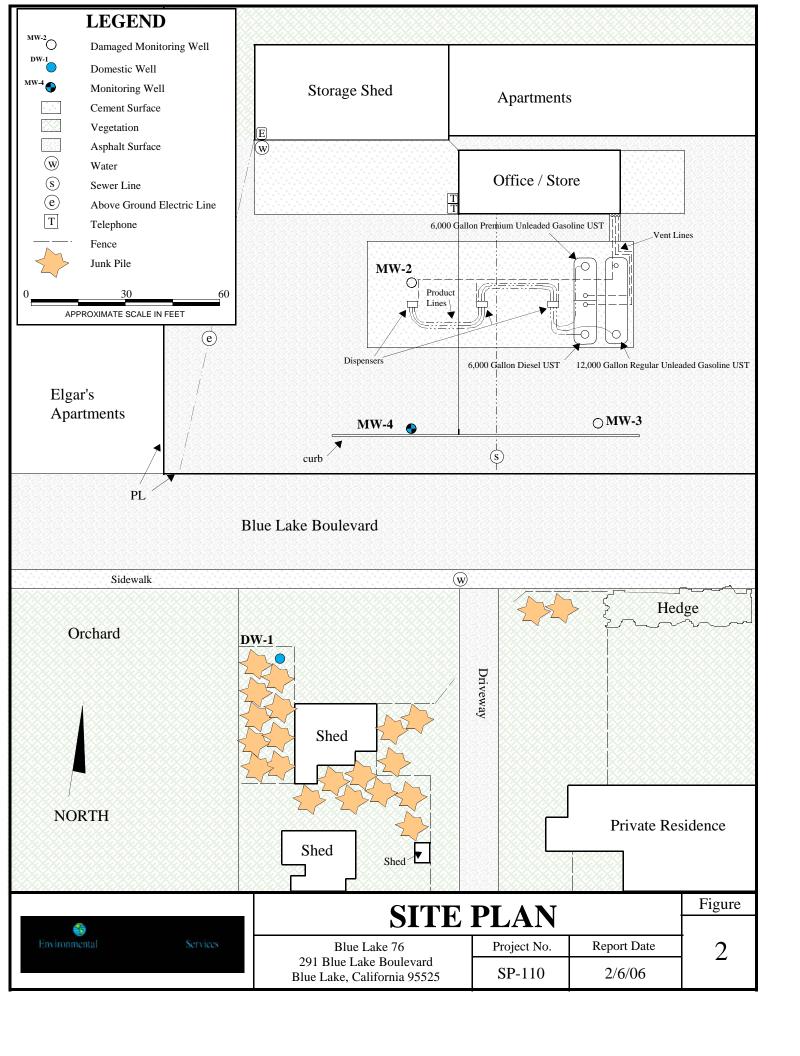
ND: Not detected. Sample was detected at or below the method detection limit as shown.

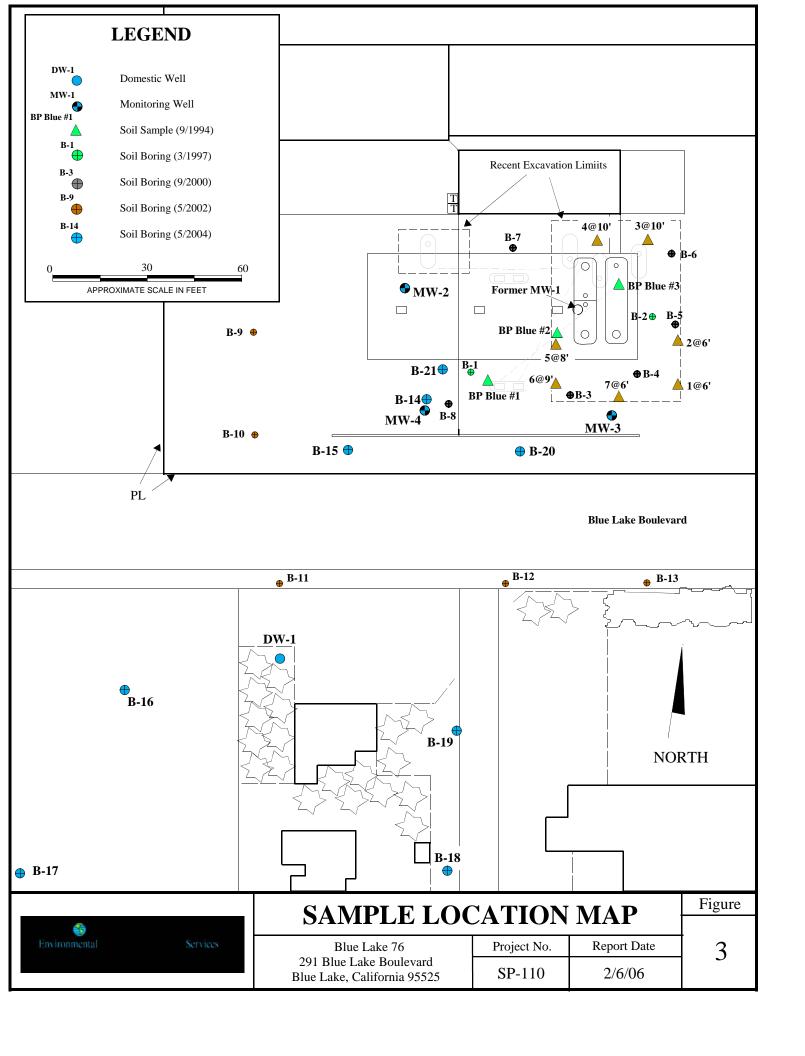
NT: Not tested.

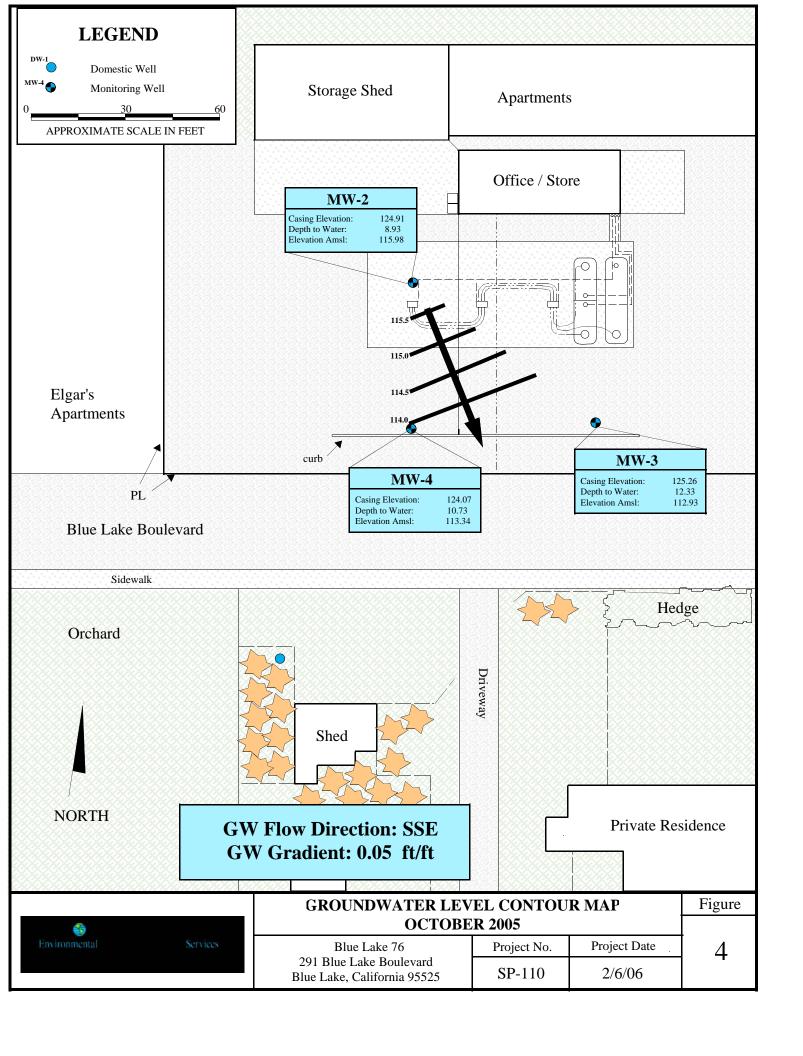
<sup>\*</sup> Laboratory method blank was contaminated in both the diesel and motor oil ranges at 76 µg/l and 82 µg/l. Not enough sample remained for re-analysis of MW-4. Based on results for MW-3 and historical analytical results, it seems likely that actual results for MW-4 were below the reporting limit.

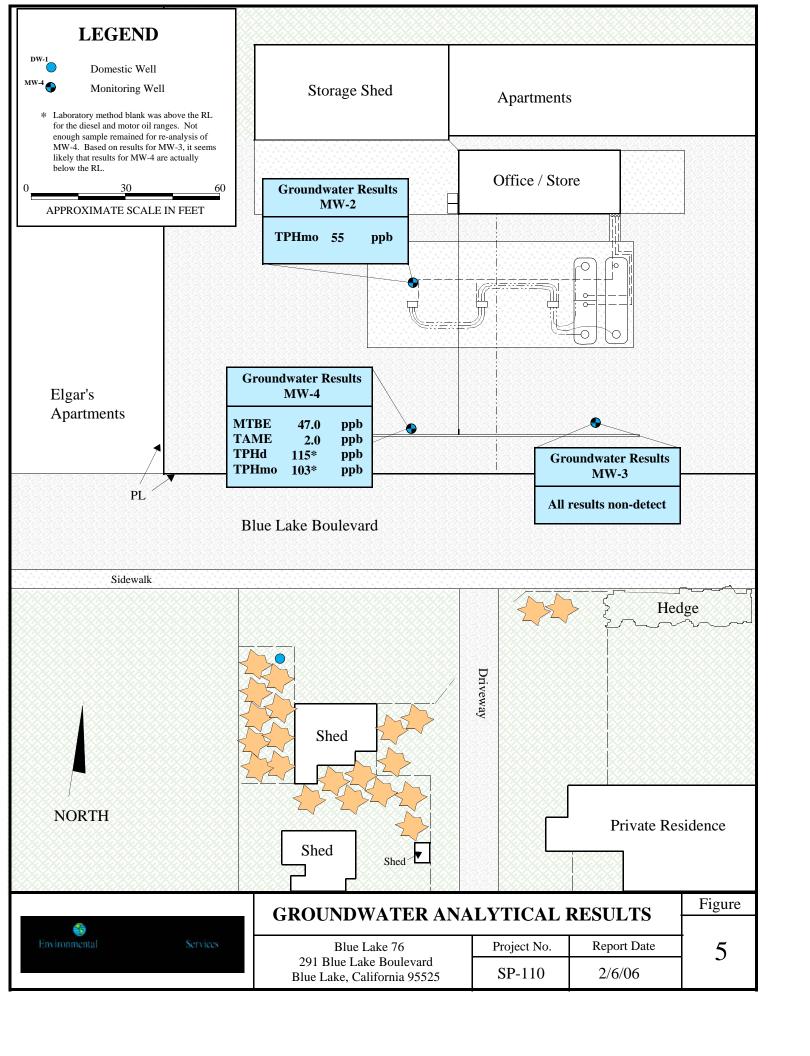
## **Figures**

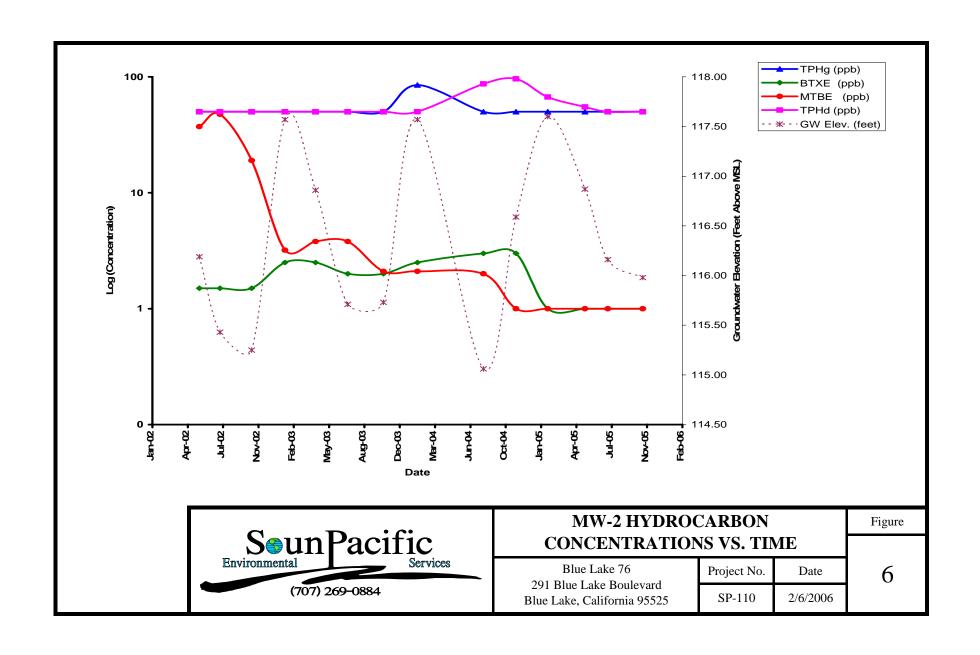


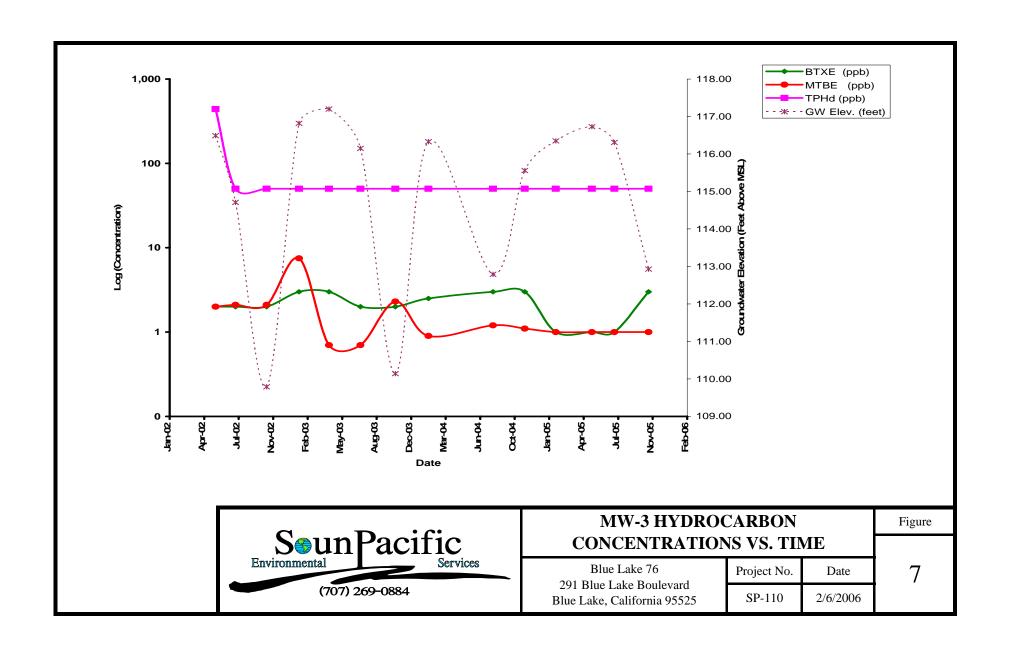


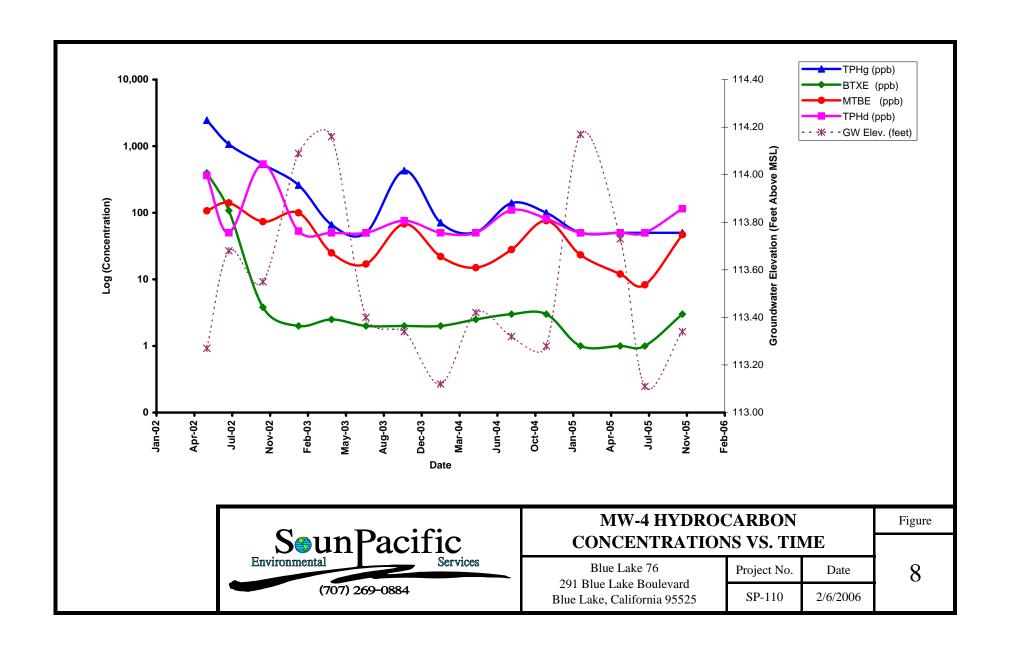


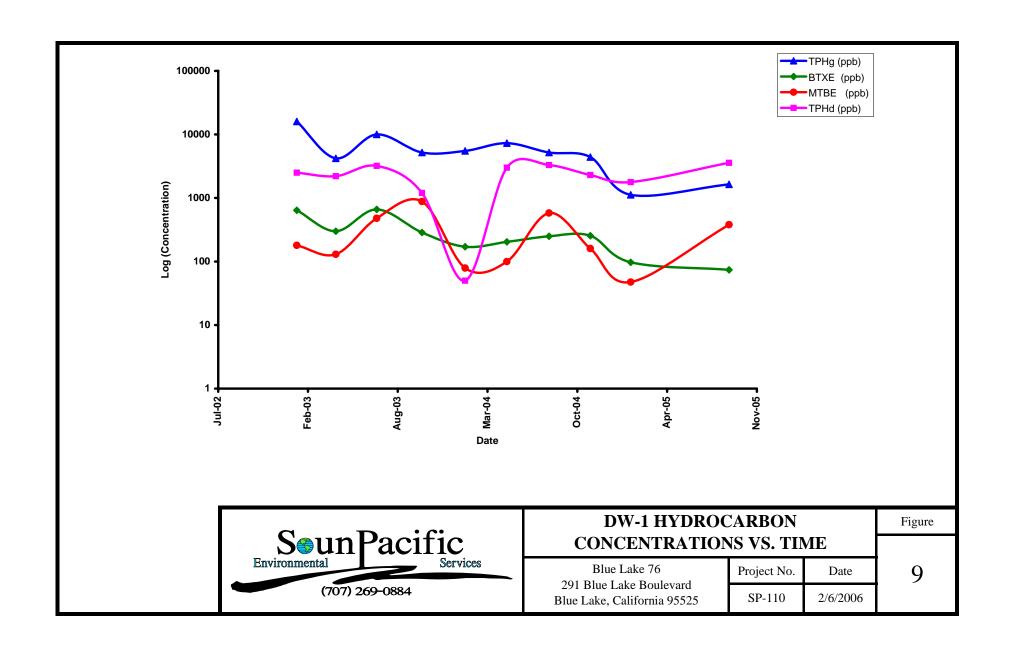












## **Appendices**

# Appendix A



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voice 530.243.7234 fax 530.243.7494

2218 Railroad Avenue Redding, California 96001

November 22, 2005

Lab ID: 5100907

Andy Malone SOUNPACIFIC 4612 GREENWOOD HEIGHTS DR KNEELAND, CA 95549 RE: BLUE LAKE 76 SP-110

Dear Andy Malone,

Enclosed are the analysis results for Work Order number 5100907. All analysis were performed under strict adherence to our established Quality Assurance Plan. Any abnormalities are listed in the qualifier section of this report.

If you have any questions regarding these results, please feel free to contact us at any time. We appreciate the opportunity to service your environmental testing needs.

Sincerely,

Ricky D. Jensen Laboratory Director

California ELAP Certification Number 1677



www.basiclab.com

voice 530.243.7234 fax 530.243.7494

2218 Railroad Avenue Redding, California 96001

Report To: **SOUNPACIFIC** 

4612 GREENWOOD HEIGHTS DR

KNEELAND, CA 95549

Attention:

Andy Malone

BLUE LAKE 76 SP-110

**Lab No:** 5100907

Reported: 11/22/05

Phone: 707-269-0884

P.O. #

Project: **Volatile Organic Compounds** 

Analyte		Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
MW-2 Water	(5100907-01)	Sampled:10/	25/05 00:00	Received:10/31	/05 09:50					
Gasoline		ug/l	ND	·		50.0	EPA 8015/8260	11/01/05	11/01/05	B5K0033
Benzene		n n	ND			0.5	"	11	H	11
Toluene		ŧ	ND			0.5	11	11	"	"
Ethylbenzene		н	ND			0.5	"	"	"	**
Xylenes (total)		II	ND			1.0	11	**	"	"
Methyl tert-butyl eth	ner	Ħ	ND			1.0	11	11	"	"
Di-isopropyl ether		n	ND			0.5	11	11	n	"
Tert-amyl methyl et	her	II .	ND			0.5	11	11	n	11
Ethyl tert-butyl ethe		Ħ	ND			0.5	10	n .	11	19
Tert-butyl alcohol		u	ND			50.0	II	п	11	н
Surrogate: 4-Bromo	fluorobenzene		92.6 %		<i>43-15</i>	55	"	"	"	"
MW-3 Water	(5100907-02)	Sampled:10/	25/05 00:00	Received:10/31	/05 09:50					
Gasoline		ug/l	ND			50.0	EPA 8015/8260	11/01/05	11/01/05	B5K0033
Benzene		11	ND			0.5	u u	H O	"	н
Toluene		"	ND			0.5	"	n	11 5	19
Ethylbenzene	ŧ	· u	ND			0.5	11	n ·	11	in
Xylenes (total)		"	ND			1.0	11	n	11	н
Methyl tert-butyl eth	ner	n n	ND			1.0	II .	"	11	н
Di-isopropyl ether		11	ND			0.5	n	**	11	n
Tert-amyl methyl et	her	11	ND			0.5	Ħ	10	u	**
Ethyl tert-butyl ethe		11	ND			0.5		11		"
Tert-butyl alcohol		11	ND			50.0	H	11	n i	II .
Surrogate: 4-Bromo	fluorobenzene		90.6 %		43-15	5 <i>5</i>	"	"	"	"
MW-4 Water	(5100907-03)	Sampled:10/	25/05 00:00	Received:10/31	/05 09:50		. 1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1
Gasoline		ug/l	ND			50.0	EPA 8015/8260	11/01/05	11/01/05	B5K0033
Benzene		11	ND			0.5	**	11	"	**
Toluene		11	ND			0.5	11	11	и	"
Ethylbenzene		11	ND			0.5	11	11	u u	"
Xylenes (total)		11	ND			1.0	11	н	u	"
Methyl tert-butyl	ether	n	47.0			1.0	11	n	n	н
Di-isopropyl ether		11	ND			0.5	11	n	п	"
Tert-amyl methyl	ether	11	2.0			0.5	II*	н	n	**
Ethyl tert-butyl ether		11	ND			0.5	11	**	n	**
Tert-butyl alcohol	=	11	ND			50.0	II.	н	n	
Surrogate: 4-Bromo	fluorobenzene		90.2 %		43-1	3 to 2 cm 2	. "	"	"	"
Jungaic. I Dromo									r reger r	pur l

Approved By

Basic Laboratory, Inc. California D.O.H.S. Cert #1677



www.basiclab.com

voice 530.243.7234 fax 530.243.7494

2218 Railroad Avenue Redding, California 96001

Report To: SOUNPACIFIC

4612 GREENWOOD HEIGHTS DR

**Lab No:** 5100907 **Reported:** 11/22/05

KNEELAND, CA 95549

**Phone:** 707-269-0884

lone P.O.

P.O. #

**Attention:** Andy Malone

**Project:** BLUE LAKE 76 SP-110

**TPH Diesel & Motor Oil** 

Analy	te		Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch
MW-2	Water	(5100907-01)	Sampled:10/	25/05 00:00	Received:10/3	1/05 09:50					
Diesel			ug/l	125	Z-01, Z-02		50	EPA 8015 MOD	11/14/05	10/31/05	B5K0002
Motor O	il		ïi .	148	Z-01, Z-02		50	n	"	н	"
Surrogat	e: Octacos	ane		118 %		<i>50-15</i> 0	0	"	"	"	"
MW-2		(5100907-01R	E1) Sampled:	10/25/05 00	:00 Received:1	L0/31/05 09:5	50				
Diesel			ug/l	ND	O-08		50	EPA 8015 MOD	11/17/05	11/17/05	B5K0429
Motor C	il		"	55	O-08		50	n	tt	17	11
Surrogat	e: Octacos	ane		86.1 %	<i>O-08</i>	<i>50-15</i> 0	0	"	"	"	"
MW-3		(5100907-02)	Sampled:10/	25/05 00:00	Received:10/3	1/05 09:50					
Diesel			ug/l	116	Z-01, Z-02		50	EPA 8015 MOD	11/14/05	10/31/05	B5K0002
Motor C	il		ıı.	127	Z-01, Z-02		50	u	**	и	11
Surrogat	e: Octacos	эпе		112 %		50-15	0	"	"	"	"
MW-3	Water	(5100907-02R	E1) Sampled:	10/25/05 00	:00 Received:1	L0/31/05 09:	50				
Diesel			ug/l	ND	O-08		50	EPA 8015 MOD	11/17/05	11/17/05	B5K0429
Motor Oi			"	ND	O-08		50	11		n ·	"
Surrogat	e: Octacos	ane		<i>88.3 %</i>	O-08	<i>50-15</i> 0	0	"	"	: "	"
MW-4	Water	(5100907-03)	Sampled:10/	25/05 00:00	Received:10/3	1/05 09:50					
Diesel			ug/l	115	Z-01, Z-02		50	EPA 8015 MOD	11/14/05	10/31/05	B5K0002
Motor C	il		ii.	103	Z-01, Z-02		50	11	н	"	"
	e: Octacos	ane		<i>107 %</i>	-	50-15	0	"	"	"	"
							7°'* 1			Y 40	suid t

Approved By

Basic Laboratory, Inc. California D.O.H.S. Cert #1677



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voice 530.243.7234

fax 530.243.7494

2218 Railroad Avenue Redding, California 96001

SOUNPACIFIC Report To:

4612 GREENWOOD HEIGHTS DR

KNEELAND, CA 95549

Attention: Andy Malone

Project: BLUE LAKE 76 SP-110 Lab No:

5100907 11/22/05

Reported: Phone:

707-269-0884

P.O. #

#### **Notes and Definitions**

The Method Blank was contaminated in both the diesel and motor oil ranges. 5100907-01, 02, and 03 have similar levels of contamination and match the pattern present in the blank. Samples will be re-extracted except for 5100907-03 due to lack of sample. Z-02

Analyte is found in the associated blank as well as in the sample. The Method Blank was above the RL for the diesel and motor oil ranges at 76ug/L and 82ug/L.

The original extraction of this sample yielded QC recoveries outside acceptance criteria. It was re-extracted after the recommended maximum hold time. O-08

Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). The J flag is equivalent to the DNQ Estimated Concentration flag.

DET Analyte DETECTED

Analyte NOT DETECTED at or above the detection limit ND

NR Not Reported

Z-01

Sample results reported on a dry weight basis dry

RPD Relative Percent Difference

Less than reporting limit <

Less than or equal to reporting limit <u><</u>

Greater than reporting limit

Greater than or equal to reporting limit ≥

MDL Method Detection Limit

RL/ML Minimum Level of Quantitation

Maxium Contaminant Level/Action Level MCL/AL

Results reported as wet weight mg/kg

Total Threshold Limit Concentration TTLC

STLC Soluble Threshold Limit Concentration

TCLP Toxicity Characteristic Leachate Procedure

Basic Laboratory, Inc. California D.O.H.S. Cert #1677

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# Appendix B



### **Standard Operating Procedures**

## **Groundwater Level Measurements and Free Phase Hydrocarbon Measurements**

All SounPacific staff and contractors shall adopt the following procedures any time that groundwater elevations are determined for the purposes of establishing groundwater gradient and direction, and prior to any sampling event.

Wells are to be tested for free phase hydrocarbons (free product) before the first development or sampling of any new well, and in any well that has historically contained free product.

#### **Equipment Checklist**

ш	Combination water level / free phase hydrocarbon indicator probe (probe)
	Gauging Data / Purge Calculations Sheet
	Pencil or Pen/sharpie
	Disposable Gloves
	Distilled Water and or know water source on site that is clean
	Alconox (powder) or Liquinox (liquid) non-phosphate cleaners—do not use soap!
	Buckets or Tubs for decontamination station
	Tools necessary to access wells
	Site Safety Plan
	This Standard Operating Procedure
	Notify Job site business that you will be arriving to conduct work.

#### **Procedure**

- 1. Review Site Safety Plan and utilize personal protection appropriate for the contaminants that may be encountered.
- 2. Access and open all monitoring wells to be measured. Allow wells to equilibrate for approximately 15 minutes before taking any measurements.

### Standard Operating Procedure for Groundwater Level and Free Product Measurements Page 2 of 2

- 3. Decontaminate probe with Alconox or Liquinox solution, and rinse with distilled water.
- 4. Determine the diameter of the well to be measured and indicate this on the Gauging Data / Purge Calculations Sheet.
- 5. <u>Words of caution:</u> Please be careful with water level and product meters probes are not attached with high strength material so please make sure to avoid catching the end on anything in the well and make sure not to wind reel to the point that it could pull on the probe. *If product is suspect in a well, go to step 6, if no product is suspected go to step 7 below.*
- 6. When product is present or suspected: use the product level meter. Clip the static charge clamp to the side of the well casing. Then lower probe into the well through the product/water interface about one foot if possible. Then slowly raise the probe back up through the product/water interface layer and record the level as the tone changes from solid to broken-record this level in the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTP). Continue to raise the probe up through the product until the tone stops completely-record this level on the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTW). Then go to step 8.
- 7. When <u>no</u> product is present or suspected: If no free product is present, record the depth of the water (to the nearest 0.01 foot) relative to the painted black mark on the top of the well casing. Leave the probe in the well just a hair above the water level to ensure the well as equilibrated. As the well rises, the tone will sound. Make sure no increase in water levels have occurred in over a ten-minute period. Water levels can lower as well as rise. Make sure you note when the level you keep lowering the probe to has remained stable for at least ten minutes. Once this has been accomplished, please record this level in the Gauging Data / Purge Calculations Sheet to the nearest 0.01 foot (DTW).
- 8. Turn off the probe, and use the probe to determine the depth to the bottom of the well relative to the top of the well casing. This is the depth to bottom measurement (DTB).
- 9. Decontaminate probe and tape by washing in an Alconox/Liquinox solution (*read directions on solution for ratio of water to cleanser*) and use the toothbrush provided to remove any foreign substance from the probe and tape. Then triple rinse probe and tape with clean water and then proceed to take measurements in the next well.
- 10. If sampling is to occur, proceed to implement SounPacific's Standard Operating Procedure for Monitoring Well Purging and Sampling. If no sampling is to be performed, close and secure all wells and caps.



### **Standard Operating Procedures**

#### **Monitoring Well Purging and Groundwater Sampling**

All SounPacific employees and contractors shall adopt the following procedures any time that groundwater samples are to be taken from an existing groundwater monitoring well.

Prior to the implementation of these procedures, the groundwater level **MUST** be measured and the presence of free phase hydrocarbons determined in accordance with SounPacific's Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements.

#### **Equipment Checklist**

Gauging Data / Purge Calculations Sheet used for water level determination
Chain of Custody Form
pH/ Conductivity / Temperature meter
Pencil or Pen
Indelible Marker
Calculator
Disposable Gloves
Distilled Water
Alconox/liquinox liquid or powdered non-phosphate cleaner
Buckets or Tubs for decontamination station
Bottom-filling bailer or pumping device for purging
Disposable bottom-filling bailer and emptying device for sampling
String, twine or fishing line for bailers
Sample containers appropriate for intended analytical method (check with lab)
Sample labels
Site Safety Plan
Tools necessary to access wells
Drum space on site adequate for sampling event

### SounPacific Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements, Page 2 of 3

#### **Procedure**

- 1. Review Site Safety Plan and utilize personal protection appropriate for the contaminants that may be encountered.
- 2. Measure groundwater levels and check for the presence of free product in accordance with the Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements.

#### **Purging**

- 3. Calculate and record the volume of standing water in each well using the information provided on the Gauging Data / Purge Calculations sheet.

  (DTB-DTW) x Conversion Factor = Casing Volume.
- 4. The purge volume shall be at least three times and no more than seven times the volume of standing water (the casing volume).
- 5. Purge the well by bailing or pumping water from the well into a calibrated receptacle, such as a five gallon bucket or tub with markings to indicate one gallon increments. Collect purgeate in a 55 gallon labeled drum and store on site. Drum labels should include the date, contents, site number, and SounPacific's name and telephone number.
- 6. Take measurements of pH, conductivity, temperature, and visual observations to verify the stabilization of these parameters. At least five measurements of these parameters should be made throughout the purging process. The parameters shall be considered stabilized if successive measurements vary by less than 0.25 pH units, 10% of conductivity in μS, and 1°C (or 1.8°F). Continue purging until at least three times the casing volume has been removed, and the measured parameters have stabilized as indicated above. Do not exceed seven casing volumes.
- 7. Take a final depth to groundwater measurement and calculate the casing volume of the recharged well. Ideally, the casing volume should have recharged to at least 80% of the original measured casing volume before sampling commences. If due to slow recharge rates it is not feasible to wait for the well to fully recharge, then note this on the Gauging Data / Purge Calculation Sheet and proceed to sample following the procedure below.

## SounPacific Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements, Page 3 of 3

#### **Sampling**

- 8. After completing groundwater measurement, and checking for free product if necessary, in accordance with SounPacific's Standard Operating Procedures for Groundwater Level Measurements and Free Phase Hydrocarbon Measurements, and after purging monitoring wells as described above, groundwater samples may be collected.
- 9. Slowly lower a clean, previously unused disposable bailer into the well water approximately half of the bailer length, and allow the bailer to slowly fill.
- 10. Withdraw the full bailer from the monitoring well and utilize the included (clean and unused) bottom-emptying device to fill the necessary sample containers, and seal the container with the included PTFE (Teflon) lined cap.
- 11. When filling VOAs, fill the VOA completely full, with the meniscus rising above the rim of the bottle. Carefully cap the VOA and invert it and gently tap it to determine whether air bubbles are trapped inside. If the VOA contains air bubbles, refill the VOA and repeat this step.
- 12. All samples shall be labeled with the Sample ID, the Sample Date, and the Sample Location or Project Number. Use an indelible marker for writing on sample labels.
- 13. Record all pertinent sample data on the Chain of Custody.
- 14. Place samples in an ice chest cooled to 4°C with ice or "blue ice". Bottles should be wrapped in bubble wrap, and VOA's should be inserted in a foam VOA holder to protect against breakage. Samples are to be kept at 4°C until delivered to the laboratory. Any transference of sample custody shall be indicated on the Chain of Custody with the appropriate signatures as necessary.
- 15. Utilize clean, previously unused gloves, bailer and line, and bottom-emptying device for each well sampled.
- 16. When finished with all sampling, close and secure all monitoring wells.
- 17. Leave the site cleaner than when you arrived and drive safely.

# **Appendix C**

#### GAUGING DATA/PURGE CALCULATIONS

Job Site:	Blu	e Lak	æ 74	5	-	Job No.	SP-11	10	Seun Pacific Services
Event:	14 Que	rterly	Sam	ding		Date:	10-2	5-0	05 (707) 269-0884
WELL NO.	DIA. (in.)	DTB (ft.)	DTW (ft.)	ST (ft.)	CV (gal.)	PV (gal.)	SPL (ft.)	Bailer Loads	Notes
MW-Z	2	18.16	8.93	9.23	1.5	4.5			Slightly turbid
MW-3	2	19.22	12.33	6.89	1.1	3.3			Clayey color samples, very slow recharge
MW-4	2	19.43	10.73	8.7	1.4	4.2		_	Clear, Slow recharge,
		-	-	-		-	-	-	
		-		-	-	-	-	-	
			-		-	-	-	-	
		-		-	-	-	-	-	

Explanation: DIA. - Well Diameter DTB - Depth to Bottom DTW = Depth to Water ST = Saturated Thickness (DTB-DTW) CV = Casing Volume (ST x cf) PV = Purge Volume (standard 3 x CV, well development 10 x CV) SPL - Thickness of Separate Phase Liquid Conversion Factors (ef):

2 in. dia. well of = 0.16 gal./ft. 4 in. dia. well of = 0.65 gal./ft.

6 in. dia. well of = 1.44 gal./ft.

Sampler:



Well Gauging/Sampling Report

						Sh	ect of 5					
Date:	10-25	-05	Project Name	Blue Lak	e 76	Project No: SPIID	Well Number: MW-2					
Analyses Tested:	TPH	BTE	X, 5	Dxys	TPHA	TPHMO						
containers: 3 HU VOAs (40 Ml), 2 Amber Glas Bottles (1-1.)												
Purgo Technique:			Bailer			Pump						
Sounder Used: Water Motor Meter  Used: Water Motor												
Water & Free Product Levels												
т	ittae	Depth to		Depth to	Product		Notes:					
2:3	90	8.93	ft		No S	heen						
2.53		8 93										
End												
				Field Meas	urements							
Time	Total Vol. Removed/(gal)	pH	Temp/(F)	Cond./(ms/cm)	DO/(mg/L)	DO/(%)						
3:26p		2.14		0.190	4.26	45.0						
3:32	1.5	7.10	_	0.184	2.76	29.0						
3:38	3.0	7.00		0.183	2.09	21.9	ļ					
3:42	4.5	2.00	63.77	0.181	1.58	16.5	-					
							1					
Field Scientist: Tien-yu Tai												



### Well Gauging/Sampling Report

			0.000			Sheet	6 of 5.						
Analyses	Date: 25-05 Project Name: Blue Lake 76 Project No: SP-110 Well Number: MW-3  Analyzes TPH9, BTEX, 50xys, TPHd, TPHM0												
Containers	Sumple 3 HU VOAs (40 ml), Z Amber Glass Bottles (H												
Purge Technique:			Bailer	-	B	Pump							
Sounder Used:			Water Motor		<b>[</b> 20]	Interface Meter							
Water & Free Product Levels													
Т	Time	Depth to	Water	Depth to	Product		Notes:						
2:3	4 pm	12.34				No Shee	n						
2:5	7	12.33				• (							
End													
						,							
		,		Field Mca	sarements								
Time	Total Vol. Removed/(gal)	pH	Temp/(F)	Cond./(ms/cm)	DO/(mg/L)	DO/(%)	1						
3:55p	. 0	212	65.32	0.271	1.71	18.3							
4:03	1.1	201	1	0.272	1.42	15.1							
4:06	2,2	2,00	65.07	0,269	1.35	14.3							
4:14	3.3	206	65.21	0.258	1.16	12.3							
							<u> </u>						
							(1428)						
			t	Field Scientist:	Tien-	yu Tai	• 1 .						



Well Gauging/Sampling Report

						Sheet	7 01 .7						
Date: 10-25-05 Project Name: Blue Lake 76 Project No: SP110 Well Number: MW-4													
Analyses Tested:	Toured TPHy, BTEX, 5 Oxys, TPHI, TPHINO												
Sample Containers:	Containers 3 HU VOAs (40 cul), Z Amber Glass Bottles (1-4)												
Purge Technique:			Bailer		Z	Pump							
	Sounder Used: Water Meter Meter Meter												
Water & Free Product Levels													
Т	Tirgae	Depth to	Water	Depth to	Product		Notes:						
2.3	8	10.8	3			Sheen							
3.0		10.7	5										
3.18	8	10.73	3			. 1							
3.3	7	10.73				1							
End													
				Field Meas	surements								
Time	Total Vol. Removed/(gal)	pΗ	Temp/(F)	Cond./(ms/cm)	DO/(mg/L)	DO/(%)							
4:32 pm	0	202	66.14	0.308	0.93	10.0							
4:35	1.4	6.95	66.40	0.325	0.91	9.8							
4:42	2.8	6.98	66.38	0.334	0.93	100							
4:48	4.2	7.04	65.54	0.385	0.89	9.5	· · · · · · · · · · · · · · · · · · ·						
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